

# *U.S. Antarctic Marine Living Resources Program*

## *2013/2014 Weekly Field Reports*

### *Cape Shirreff, Livingston Island*

Volume 17  
24 February 2014

#### Science Report

##### Seabirds

1. Chinstrap chicks began to fledge this week. On 22 February, we started weighing fledglings along the penguin colony beaches. The chinstrap fledge weights provide a measure of body condition before the chicks depart to sea and forage independently for the first time. We will continue to record weights throughout the fledging period.
2. Gentoo chicks have started moulting their down. They continue to be provisioned by their parents and will not fledge until after we have departed for the season.
3. Non-breeding adult gentoos and chinstraps have begun moulting in large numbers around the colonies. There are now swirling eddies of penguin feathers around the Cape.
4. On 22 and 23 February we deployed 45 geolocating devices on breeding chinstraps. The devices provide information about migration routes and overwinter distributions. These devices record light levels during the course of the day to estimate the latitude and longitude of the tag's location. The tags have also been programmed to record daily sea surface temperature throughout the winter season. These tags will be recovered next year when the birds return to the colony to breed.
5. We have recovered all the biologging instruments (four PTTs and three TDRs) deployed on chinstrap penguins. The data collected will be analyzed post-season to provide information on the post-crèche foraging behavior.
6. We have finished banding the four skua chicks that are still alive. One active territory on Punta Oeste, which was not monitored as often as other territories, was determined to have failed after a visit this week showed no signs of a chick. A chick census of four marks the lowest number of brown skua chicks recorded at Cape Shirreff since 1997.
7. A black-browed albatross has been seen foraging off the coast for several days this past week.



### Pinnipeds

8. Four more fur seal pups of the original 30 CCAMLR attendance study females have died, which brings the total to 25 females who have now lost their pups.
9. Average trip lengths continue to be just over three days, though the sample sizes are becoming smaller due to pup losses.
10. We continue to monitor our adult tagged female population and mother pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Our current estimate for pup loss to leopard seal predation as of 23 February is 69.1%.
11. Systematic surveys of defined areas of the Cape for the 500 per annum fur seals tagged as pups continued this week. This will give us a measure of tags sighted per unit of effort for different cohorts and for different areas of the Cape.
12. On 19 February, we collected the fourth sample of CCAMLR pup weights. The average weight for male pups was 15.5 kg (s.e. = 0.18, n = 50, range = 9.8 - 19.4) while the average for females was 12.9 kg (s.e. = 0.15, n = 55, range = 9.5 - 17.6).
13. We have flipper tagged 161 fur seal pups for future demographic studies and cohort success. Twenty five of these are pups of tagged females. Our remaining 89 tags for the year will be deployed over the next week.
14. On 22 February, we completed our fifteenth weekly Cape-wide phocid census. We counted 92 southern elephant seals, 29 Weddell seals, and 15 leopard seals.
15. This week we collected our tenth and final fur seal diet sample of ten scats. To date 100 scats have been collected, and 94 have been processed.
16. In an unforeseen turn of events, we were able to establish communication with the geolocation tags sent down for an overwinter study. We will now begin deploying 24 tags on fur seals.
17. As of 23 February, we have recorded 361 sightings of 32 tagged leopard seals. We have recorded an additional 32 sightings of untagged or otherwise unidentified seals which have been added to our photo-identification database.



18. We have now deployed five animal-borne video instruments (CRITTERCAM developed by National Geographic's Remote Imaging group) on adult female leopard seals. As of the conclusion of this study, we have recovered four instruments which contained over 28 hours of high definition footage.
19. This season we successfully completed nineteen leopard seal captures on ten animals. All nine GPS location instruments have been recovered.
20. One calm afternoon last week allowed us to complete this year's hexacopter operations. We have collected over 6,500 aerial images of the cape, leopard seals, fur seal and penguin colonies.

### Weather

21. We had another blustery February week here at the Cape. The winds have been mostly out of the west (63.2%), particularly at the end of the week. The mean wind speed was 10.7 mph with a max of 42 mph. Temperatures averaged 1.4°C (range: -0.3 - 4.6°C). The mean daily solar radiation was 11,017 W/m<sup>2</sup>.

### Camp

22. Despite a very full science schedule we managed to make progress on several camp maintenance fronts: 1) The west wall of the fur seal lab was scraped and painted; 2) we have begun staging equipment and fuel on the boat beach in preparation of camp closing; 3) three of our 3 kw generators were serviced this week and winterized; and 4) the shelves in the supply hut were reorganized and cleaned.

---

Presented by Doug Krause and Michelle Goh, with assistance from Kevin Pietrzak, McKenzie Mudge, Trevor Joyce, and David Vejar at the Cape Shirreff Field Camp, Livingston Island, South Shetland Islands, Antarctica

